

## **ABSTRACT**

**[0061]** A molecular memory integrated circuit in accordance with one embodiment of the present invention can include a set of actuators capable of moving a platform. The platform can contain one of a memory device and a Molecular Array Read/Write Engine (MARE) having a cantilever system including at least one cantilever tip. When the memory device platform is brought within close proximity of the MARE platform, the set of actuators can position the at least one cantilever tip to a specific location on the memory device. The at least one cantilever tip can perform a number of functions to the memory device, including reading the state of the memory device or changing the state of the memory device. In other embodiments, a plurality of actuators is capable of moving a plurality of platforms.